ABSTRACT OF THE DISCLOSURE:

An iron compound catalyst for inhibiting the generation of dioxin of the present invention, comprise iron oxide particles, iron oxide hydroxide particles or mixed particles thereof having a catalytic activity capable of converting not less than 15 % of carbon monoxide into carbon dioxide when 2.8 x 10^{-4} mol of iron oxide particles obtained by heat-treating said iron compound catalyst in air at a temperature of 800°C for 15 minutes, are instantaneously contacted with 6.1 x 10^{-7} mol of carbon monoxide at a temperature of 250°C at a space velocity (SV) of 42,400 hr^{-1} in an inert gas atmosphere using a pulse catalytic reactor, said iron oxide particles or said iron oxide hydroxide particles having an average particle size of 0.01 to 2.0 μm, a BET specific surface area of 0.2 to 200 m^2/g, a phosphorus content of not more than 0.02 % by weight, a sulfur content of not more than 0.6 % by weight and a sodium content of not more than 0.5 % by weight. Such an iron compound catalyst enables complete combustion of the municipal solid waste and decomposition of dioxin precursors even at a low combustion temperature in intermittently operated incinerators such as mechanical batch incinerators or semi-continuous incinerators, and can inhibit the generation of dioxin due to a memory effect upon low-temperature combustion at the start-up or shut-down of the incinerators, without large-scale incinerator renovation or plant and equipment investment.